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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GOPAL PARUPUDI, STEPHEN S. EVANS, and
EDWARD F. REUS

Appeal 2007-3976
Application 09/746,924¹
Technology Center 2100

Decided: May 5, 2008

Before LANCE LEONARD BARRY, JEAN R. HOMERE, and
JAY P. LUCAS, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 2 through 7, 9 through 30, 32 through 39, 41 through 46,

¹ Filed on Dec. 22, 2000. The real party in interest is Microsoft Corp.

and 48. Claims 1, 8, 40, and 47 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Appellants invented a method and system for dynamically determining the current location of a portable computing device in order to enable the portable device to interact in a meaningful way with its immediate environment. (Spec. 51.) As depicted in Figure 12, portable devices (1202, 1204, 1206 or 1208) are communicatively linked with respective locations (1210, 1212, and 1214) structured as a hierarchical tree (Figure 3) having a plurality of nodes associated therewith. (Spec. 26.) As shown in Figure 13, upon receiving a request to determine the location of a portable device, a global positional system (GPS) or a Bluetooth device traverses one or more nodes of the corresponding hierarchical tree to ascertain the device location. (Spec. 8-9.) A server (1216, 1218), via the Internet, subsequently provides the located device with access to a store of digital data pertaining to the device location to enable to the device to interact meaningfully with its immediate environment. (*Id.* 52.)

Independent claim 2 further illustrates the invention. It reads as follows:

2. A method of operating a portable computing device comprising:

determining a location of the portable computing device by accessing one or more hierarchical tree structures each of which comprising multiple nodes that represent physical or logical locations; and traversing at least one node on the one or more hierarchical tree structures to ascertain a device location;

acquiring digital data associated with the determined location and that can permit the portable computing device to interact with a location environment; and

interacting with the location environment based, at least in part, on the acquired digital data.

The Examiner relies on the following prior art:

Goldman	US 6,343,291B1	Jan. 29, 2002 (Filed Feb. 26, 1999)
Dowling	US 6,522,875B1	Feb. 18, 2003 (Filed Nov. 17, 1998)

Jennifer Fulton, *Computer Maintenance, Part 1, First Step: Spring Cleaning*, (“Toggle”), 2, (1999).

The Examiner rejects the claims on appeal as follows:

1. Claims 2 through 7, 9 through 21, 23 through 30, 32 through 36, 38, 39, 41 through 46, and 48 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Dowling and Goldman.
2. Claims 22 and 37 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Dowling, Goldman and Fulton.

FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence.

Dowling

1. Dowling discloses a method and system for determining the current location of a mobile terminal unit in order to send locally broadcast signals to the mobile unit. (Abstract.)

2. As the mobile unit (105) mounted on a vehicle (102) travels from one location to another, a GPS receiver tracks the coordinates of the mobile unit for comparison with website data in a particular locality. When the GPS coordinates indicate that the mobile unit's current position is within the range of the local website domain, associated digital data (e.g. webpage or applets) stored in a server repository is automatically transmitted to the mobile unit. The wirelessly downloaded data to the mobile unit includes pointers to software codes that permit the mobile unit to interact with the current environment where it is located. (Col. 11, ll. 26-65, col. 15, ll. 11-42.)

Goldman

3. As shown in Figure 37, Goldman discloses a method and system for structuring location information stored in a repository into a hierarchical tree having a plurality of nodes. (Col. 38, ll. 30-62.)

4. Goldman discloses traversing one or more nodes of the hierarchical tree structure to access a desired location information from the location repository. (Col. 8, l. 65 - col. 9, l. 10.)

PRINCIPLES OF LAW

OBVIOUSNESS

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir.

2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’

KSR Int’l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) wherein evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR Int’l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1739-40 (2007)). “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *KSR*, 127 S. Ct. at 1742.

Discussing the obviousness of claimed combinations of elements of prior art, *KSR* explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *Ag Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. Where the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that there was “an apparent reason to combine the known elements in the fashion claimed.” *KSR*, 127 S. Ct. at 1741. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The reasoning given as support for the conclusion of obviousness can be based on interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. *KSR*, 127 S. Ct. at 1740-41. See also *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2007).

We note our reviewing court has recently reaffirmed that:

[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal—and even common-sensical—we have held that there exists in these situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references.

Dystar 464 F.3d at 1368. *See also Leapfrog*, 485 F.3d at 1162 (holding it “obvious to combine the Bevan device with the SSR to update it using modern electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost.”).

Also, a reference may suggest a solution to a problem it was not designed to solve and thus does not discuss. *KSR*, 127 S. Ct. at 1742 (“Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

The prior art relied on to prove obviousness must be analogous art. As explained in *Kahn*,

the ‘analogous-art’ test . . . has long been part of the primary *Graham* analysis articulated by the Supreme Court. *See Dann* [v. *Johnston*,] 425 U.S. [219,] 227-29 (1976), *Graham*, 383 U.S. at 35. The analogous-art test requires that the Board show that a reference is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned in order to rely on that reference as a basis for rejection. *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992). References are selected as being reasonably pertinent to the problem based on the judgment of a person having ordinary skill in the art. *Id.* (“[I]t is necessary to consider ‘the reality of the circumstances,’—in other words, common sense—in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.” (quoting *In re Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979))).

Kahn, 441 F.3d at 986-87. *See also In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992) (“[a] reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.”).

In view of KSR's holding that “*any* need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed,” 127 S. Ct. at 1742 (emphasis added), it is clear that the second part of the analogous-art test as stated in *Clay, supra*, must be expanded to require a determination of whether the reference, even though it may be in a different field from that of the inventor's endeavor, is one which, because of the matter with which it deals, logically would have commended itself to an artisan's (not necessarily the inventor's) attention in considering *any* need or problem known in the field of endeavor. Furthermore, although under *KSR*

it is not always necessary to identify a known need or problem as a motivation for modifying or combining the prior art, it is nevertheless always necessary that the prior art relied on to prove obviousness be analogous. *See KSR*, 127 S. Ct. at 1740. (“The Court [in *United States v. Adams*, 383 U.S. 39, 40 (1966)] recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another *known in the field*, the combination must do more than yield a predictable result.”) (emphasis added). *See also Sakraida*, 425 U.S. at 280 (“Our independent examination of that evidence persuades us of its sufficiency to support the District Court's finding ‘as a fact that each and all of the component parts of this patent . . . were old and well-known throughout the dairy industry long prior to the date of the filing of the application for the Gribble patent.’”).

ANALYSIS

Independent claim 2 recites in relevant part traversing one or more nodes of the hierarchical tree structure to ascertain the location of the portable computing device. (App. Br. 22, Claims Appendix.) Appellants argue that the combination of Dowling and Goldman does not teach these limitations. (App. Br. 7, Reply Br. 4.) Appellants further argue that there is insufficient rationale to combine the teachings of the cited references to yield the claimed invention. (*Id.*) In response, the Examiner avers that Dowling’s disclosure of determining whether the GPS coordinates of a mobile unit fall within the range of the domain of location data stored in a repository to ascertain the mobile unit’s current position, taken in combination with Goldman’s disclosure of structuring as a hierarchical tree

location information stored in a data repository, and traversing one or more nodes of the tree to ascertain the location of a device, teaches the cited limitations. (Ans. 4, 15-16.)

Therefore, the issue before us is whether one of ordinary skill in the art would have found sufficient rationale to properly combine Dowling's disclosure of using information in a location repository to ascertain the position of a mobile unit, with Goldman's disclosure of traversing one or more nodes of a hierarchical tree of location data to access a desired location information, to yield the invention as recited in claim 2. We answer this inquiry in the affirmative.

As set forth in the findings of fact section, Dowling teaches determining that the current position of a mobile device is within the range of a website's domain by comparing the GPS coordinates of the device with location data stored in a location repository, and subsequently transmitting to the mobile device digital packets associated with the website. (FF 1-2.) Further, Dowling teaches that the digital packets transmitted to the mobile device are tailored for the device to interact with its immediately identified environment. (*Id.*) Additionally, Goldman teaches that location data stored in a repository is structured as a hierarchical tree and that at least one node of the tree is traversed to access a desired location information. (FF 3-4.) One of ordinary skill in the art, at the time of the present invention, would have appreciated Goldman's suggestion of traversing at least a node of a hierarchically structured location repository in order to determine whether the GPS coordinates of Dowling's mobile unit fall within the range of location data stored in the tree. This proffered combination would *predictably result* in a system that traverses one or more nodes of a

hierarchically structured repository to locate the current position of a mobile unit.

Appellants' allegation that there is insufficient rationale to combine the cited references is not persuasive. The Supreme Court has held that in analyzing the obviousness of combining elements, a court need not find specific teachings, but rather may consider "the background knowledge possessed by a person having ordinary skill in the art" and "the inferences and creative steps that a person of ordinary skill in the art would employ." *See KSR* at 1740-41. To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740. As set forth in the preceding paragraph, both Dowling and Goldman teach accessing a location repository to retrieve location information. Further, Goldman teaches traversing a hierarchically structured repository to access such location information. Therefore, as disclosed by the Dowling-Goldman combination, the module for traversing one or more nodes of a hierarchically structured repository is prior art element that is being used in a conventional global positioning system to perform its established function to predictably result in ascertaining the location of a mobile unit as claimed. It follows that Appellants have not shown that the Examiner erred in concluding that the combination of Dowling and Goldman renders independent claim 2 unpatentable.

Regarding the rejection of independent claims 20, 32, 41, and 48, Appellants reiterate substantially the same arguments as those proffered for the patentability of claim 2. (App. Br. 8-20, Reply Br. 11-29.) We have already addressed these arguments in our discussion of claim 2 above, and we disagree with Appellants. It follows for these same reasons that

Appellants have not shown that the Examiner erred in concluding that the combination of Dowling and Goldman renders independent claims 20, 32, 41, and 48 unpatentable.

Appellants do not provide separate arguments with respect to the rejection of dependent claims 3 through 7 and 9 through 19, 21, 23 through 30, 33 through 36, 38, 39, and 42 through 46. Consequently, these claims fall together with independent claims 2, 20, 32, 41, and 48. 37 C.F.R. § 41.37(c)(1)(vii).

Regarding the rejection of dependent claims 22 and 37, Appellants allege that Fulton does not cure the deficiencies of the Dowling-Goldman combination, which allegedly fails to render independent claims 20 and 32 unpatentable. (App. Br. 15, 20.) We do not agree with Appellants. As detailed in our discussion of claims 20 and 32 above, the Dowling-Goldman combination teaches the claimed limitations. Therefore, we find no such deficiencies in the cited combination for Fulton to cure. It follows for these same reasons that Appellants have not shown that the Examiner erred in concluding that the combination of Dowling, Goldman and Fulton renders claims 22 and 37 unpatentable.

CONCLUSION OF LAW

1. Appellants have not shown that the Examiner erred in concluding that claims 2 through 7, 9 through 21, 23 through 30, 32 through 36, 38, 39, 41 through 46, and 48 are unpatentable over the combination of Dowling and Goldman under 35 U.S.C. § 103.

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2. Appellants have not shown that the Examiner erred in concluding that claims 22 and 37 are unpatentable over the combination of Dowling, Goldman and Fulton under 35 U.S.C. § 103.

DECISION

We affirm the Examiner's decision rejecting claims 2 through 7, 9 through 30, 32 through 39, 41 through 46, and 48.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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